

What is claimed is:

1. A liquid crystal display device comprising pixel regions each of which is divided into a light reflection portion and a light transmission portion on a liquid-crystal-side surface of one substrate out of substrates which are arranged to face each other in an opposed manner while sandwiching liquid crystal therebetween, wherein

on each pixel region, a first light-transmitting pixel electrode which is formed on the light reflection portion and the light transmission portion, a material layer which is formed on a major portion of the light reflection portion, an insulation layer in which an opening is formed at the light transmission portion, and a second pixel electrode which is formed on the light reflection portion and also functions as a reflection film are sequentially laminated.

2. A liquid crystal display device comprising pixel regions each of which is divided into a light reflection portion and a light transmission portion on a liquid-crystal-side surface of one substrate out of substrates which are arranged to face each other in an opposed manner while sandwiching liquid crystal therebetween, wherein

the pixel region is formed as a region which is surrounded by a pair of gate signal lines and a pair of drain signal lines and includes a thin film transistor which is operated in response to scanning signals from one gate signal line out of the pair of gate signal lines and first and second pixel electrodes to which video signals from one drain signal line out of the pair of

drain signal lines are supplied through the thin film transistor, and

on each pixel region, the first light-transmitting pixel electrode which is formed on the light reflection portion and the light transmission portion, a material layer which is formed on a major portion of the light reflection portion, an insulation layer in which an opening is formed at the light transmission portion, and the second pixel electrode which is formed on the light reflection portion and also functions as a reflection film are sequentially laminated.

3. A liquid crystal display device comprising pixel regions each of which is divided into a light reflection portion and a light transmission portion on a liquid-crystal-side surface of one substrate out of substrates which are arranged to face each other in an opposed manner while sandwiching liquid crystal therebetween, wherein

the pixel region is formed as a region which is surrounded by a pair of gate signal lines and a pair of drain signal lines and includes a thin film transistor which is operated in response to scanning signals from one gate signal line out of the pair of gate signal lines and first and second pixel electrodes to which video signals from one drain signal line out of the pair of drain signal lines are supplied through the thin film transistor,

on each pixel region, the first light-transmitting pixel electrode which is formed on the light reflection portion and the light transmission portion, a material layer which is formed on a major portion of the light reflection portion, an insulation layer in which an opening is formed at the light transmission portion, and the second pixel electrode which is formed on

the light reflection portion and also functions as a reflection film are sequentially laminated, and

a total layer thickness of the first pixel electrode and the material layer and a layer thickness of the gate signal line are respectively set to equal to or less than 100 nm.

4. A liquid crystal display device comprising pixel regions each of which is divided into a light reflection portion and a light transmission portion on a liquid-crystal-side surface of one substrate out of substrates which are arranged to face each other in an opposed manner while sandwiching liquid crystal therebetween, wherein

the pixel region is formed as a region which is surrounded by a pair of gate signal lines and a pair of drain signal lines and includes a thin film transistor which is operated in response to scanning signals from one gate signal line out of the pair of gate signal lines and first and second pixel electrodes to which video signals from one drain signal line out of the pair of drain signal lines are supplied through the thin film transistor,

on each pixel region, the first light-transmitting pixel electrode which is formed on the light reflection portion and the light transmission portion, a material layer which is formed on a major portion of the light reflection portion, an insulation layer in which an opening is formed at the light transmission portion, and the second pixel electrode which is formed on the light reflection portion and also functions as a reflection film are sequentially laminated, and

the difference between a total layer thickness of the first pixel

electrode and the material layer and a layer thickness of the gate signal line is set to equal to or less than 0.1 μm .

5. A liquid crystal display device comprising pixel regions each of which is divided into a light reflection portion and a light transmission portion on a liquid-crystal-side surface of one substrate out of substrates which are arranged to face each other in an opposed manner while sandwiching liquid crystal therebetween, wherein

the pixel region is formed as a region which is surrounded by a pair of gate signal lines and a pair of drain signal lines and includes a thin film transistor which is operated in response to scanning signals from one gate signal line out of the pair of gate signal lines and first and second pixel electrodes to which video signals from one drain signal line out of the pair of drain signal lines are supplied through the thin film transistor, and

on each pixel region, the first light-transmitting pixel electrode which is formed on the light reflection portion and the light transmission portion, an extension layer of a source electrode of the thin film transistor which is connected to the first pixel electrode and is formed on a major portion of the light reflection portion, an insulation layer in which an opening is formed at the light transmission portion, and the second pixel electrode which is formed on the light reflection portion, is connected to the source electrode through a contact hole formed in the insulation layer and also functions as a reflection film are sequentially laminated.

6. A liquid crystal display device comprising pixel regions each of

which is divided into a light reflection portion and a light transmission portion on a liquid-crystal-side surface of one substrate out of substrates which are arranged to face each other in an opposed manner while sandwiching liquid crystal therebetween, wherein

the pixel region is formed as a region which is surrounded by a pair of gate signal lines and a pair of drain signal lines and includes a thin film transistor which is operated in response to scanning signals from one gate signal line out of the pair of gate signal lines and first and second pixel electrodes to which video signals from one drain signal line out of the pair of drain signal lines are supplied through the thin film transistor,

on each pixel region, the first light-transmitting pixel electrode which is formed on the light reflection portion and the light transmission portion, an extension layer of a source electrode of the thin film transistor which is connected to the first pixel electrode and is formed on a major portion of the light reflection portion, an insulation layer in which an opening is formed at the light transmission portion, and the second pixel electrode which is formed on the light reflection portion, is connected to the source electrode through a contact hole formed in the insulation layer and also functions as a reflection film are sequentially laminated, and

the difference between a total layer thickness of the first pixel electrode and the extension layer of the source electrode and a layer thickness of the gate signal line is set to equal to or less than $0.1 \mu\text{m}$.

7. A liquid crystal display device comprising pixel regions each of which is divided into a light reflection portion and a light transmission

portion on a liquid-crystal-side surface of one substrate out of substrates which are arranged to face each other in an opposed manner while sandwiching liquid crystal therebetween, wherein

the pixel region is formed as a region which is surrounded by a pair of gate signal lines and a pair of drain signal lines and includes a thin film transistor which is operated in response to scanning signals from one gate signal line out of the pair of gate signal lines and first and second pixel electrodes to which video signals from one drain signal line out of the pair of drain signal lines are supplied through the thin film transistor,

on each pixel region, the first light-transmitting pixel electrode which is formed on the light reflection portion and the light transmission portion, a material layer which is formed on a major portion of the light reflection portion, an insulation layer in which an opening is formed at the light transmission portion, and the second pixel electrode which is formed on the light reflection portion and also functions as a reflection film are sequentially laminated, and

the second pixel electrode is formed in a superposed manner on the other gate signal line out of the pair of gate signal lines.

8. A liquid crystal display device comprising pixel regions each of which is divided into a light reflection portion and a light transmission portion on a liquid-crystal-side surface of one substrate out of substrates which are arranged to face each other in an opposed manner while sandwiching liquid crystal therebetween, wherein

the pixel region is formed as a region which is surrounded by a pair

of gate signal lines and a pair of drain signal lines and includes a thin film transistor which is operated in response to scanning signals from one gate signal line out of the pair of gate signal lines and first and second pixel electrodes to which video signals from one drain signal line out of the pair of drain signal lines are supplied through the thin film transistor,

on each pixel region, the first light-transmitting pixel electrode which is formed on the light reflection portion and the light transmission portion, a material layer which is formed on a major portion of the light reflection portion, an insulation layer in which an opening is formed at the light transmission portion, and the second pixel electrode which is formed on the light reflection portion and also functions as a reflection film are sequentially laminated, and

the second pixel electrode is formed in a superposed manner on the other gate signal line out of the pair of gate signal lines, and a height adjusting material which is provided for setting the difference between a height of the second pixel electrode with respect to the substrate in the light reflection portion and a height of the second pixel electrode which is formed in a superposed manner on the other gate signal line with respect to the substrate is set to equal to or less than $0.1\ \mu\text{m}$ is interposed at at least one of the light reflection portion or the other gate signal line.

9. A liquid crystal display device comprising pixel regions each of which is divided into a light reflection portion and a light transmission portion on a liquid-crystal-side surface of one substrate out of substrates which are arranged to face each other in an opposed manner while

sandwiching liquid crystal therebetween, wherein

the pixel region is formed as a region which is surrounded by a pair of gate signal lines and a pair of drain signal lines and includes a thin film transistor which is operated in response to scanning signals from one gate signal line out of the pair of gate signal lines and first and second pixel electrodes to which video signals from one drain signal line out of the pair of drain signal lines are supplied through the thin film transistor, and

on each pixel region, the first light-transmitting pixel electrode which is formed on the light reflection portion and the light transmission portion, a material layer which is formed on a major portion of the light reflection portion, an insulation layer which is formed on the light reflection portion and the light transmission portion, and the second pixel electrode which is formed on the light reflection portion and also functions as a reflection film are sequentially laminated.

10. A liquid crystal display device comprising pixel regions each of which is divided into a light reflection portion and a light transmission portion on a liquid-crystal-side surface of one substrate out of substrates which are arranged to face each other in an opposed manner while sandwiching liquid crystal therebetween, wherein

the pixel region is formed as a region which is surrounded by a pair of gate signal lines and a pair of drain signal lines and includes a thin film transistor which is operated in response to scanning signals from one gate signal line out of the pair of gate signal lines and first and second pixel electrodes to which video signals from one drain signal line out of the pair of

drain signal lines are supplied through the thin film transistor,

on each pixel region, the first light-transmitting pixel electrode which is formed on the light reflection portion and the light transmission portion, a material layer which is formed on a major portion of the light reflection portion, an insulation layer which is formed on the light reflection portion and the light transmission portion, and the second pixel electrode which is formed on the light reflection portion and also functions as a reflection film are sequentially laminated, and

the difference between a total layer thickness of the first pixel electrode and the material layer and a layer thickness of the gate signal line is set to equal to or less than $0.1\ \mu\text{m}$.

11. A liquid crystal display device according to claim 1, further comprising a backlight.

12. A liquid crystal display device according to claim 2, further comprising a backlight.

13. A liquid crystal display device according to claim 3, further comprising a backlight.

14. A liquid crystal display device according to claim 4, further comprising a backlight.

15. A liquid crystal display device according to claim 5, further

comprising a backlight.

16. A liquid crystal display device according to claim 6, further comprising a backlight.

17. A liquid crystal display device according to claim 7, further comprising a backlight.

18. A liquid crystal display device according to claim 8, further comprising a backlight.

19. A liquid crystal display device according to claim 9, further comprising a backlight.

20. A liquid crystal display device according to claim 10, further comprising a backlight.

20090907-031922